

Dominion Marine Group, Ltd.
Kittiwake Paint Sampling Plan (February 16th, 2006)

This document forms a part of the "Kittiwake Reef Preparation Plan" dated May 19, 2005 prepared for the Cayman Islands Tourism Association by Dominion Marine Group, Ltd. and URS Corporation and submitted to MARAD.

1. Background:

This specification has been compiled following direction from the US EPA, MARAD and the Cayman Islands Department of the Environment. The intention of the pre-remediation paint sampling on the ex-USS Kittiwake is to have definitive results on the matter of any possible PCB's contained in the paint addressed prior to the undertaking of full remediation of the ship. Through the process defined following, it will be ascertained if any PCB's are on-board the ship in the paint. The CITA and the Cayman Islands Government have proposed solutions for both positive and negative results on the sampling, included herein.

Although the EPA Guidance Protocol specifically identifies utilization of either 8080A or 8081, neither of these protocols currently provide for the identification and measurement of the various Aroclors (i.e. 1016, 1221, 1232, 1242, 1248, 1254, 1260 and 1268) identified as critical to the evaluation of the presence of PCB material. Therefore, under recommendation from Universal Laboratories, in keeping with the most recent description of method 8081 and method 8082, which includes the analysis of the required Aroclors, this process will be utilized exclusively for this testing.

2. Costs:

The costs of the paint sampling on the ex-USS Kittiwake are being born by the CITA and the Cayman Islands Government.

3. Contacts:

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4. Ship to be sampled:

Ex-USS Kittiwake, 251' submarine rescue vessel ASR-13

- Chanticleer Class Submarine Rescue Vessel
- Displacement: 2,045 tons (full load)
- Length: 251'4" , Beam: 42' , Draft: 16'
- Speed: 14.5 knots (max); 10 knots (econ)
- Armament: 2 3"/50 DP, 8 20mm, 4 DC tracks
- Complement: 85 Officers and Sailors
- Diesel-electric engines, single screw, 3,000 BHP for 15 knots
- Built: Savannah Machinery and Foundary Co, Savannah, Georgia
- Commissioned July 10, 1945
- Decommissioned September 30, 1994

5. Methodology:

In accordance with the standards presented in the EPA "Compliance with Toxic Substance Control Act (TSCA) PCB Disposal Regulations: Sampling and Analyzing Paint on Metal Surfaces of Vessels being Scrapped for Metal Recovery", DMG will undertake comprehensive paint sampling on the ex-USS Kittiwake, with the analytical results provided to the Cayman Islands Department of the Environment and the Cayman Islands Tourism Association (CITA).

6. Sampling Protocol:

6.1 The samples will be collected according to EPA protocol and labeled with a representative compartment number of the location on the deck, overhead, wall, bulkhead, etc. sampled or within the area of the sampling region.

6.2 All samples will be collected utilizing paint scrapers. The heads or cutting edges of the tools used will be cleaned between collections of samples for any discontinuous areas or areas within an area that have different colored paint.

6.3 Personnel collecting samples will utilize a new pair of sterile gloves during the collection of each distinct sample.

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6.4 The type of container used for sampling storage will be 2" manila envelopes, with each sample placed in its own sealed envelope.

6.4 Each sample taken will be at least 30 centimeters by 30 centimeters, including all paint layers from the outer surface to bare metal.

6.5 Adjacent areas to any given area will be sampled until a 50 gram sample is obtained.

6.6 All samples will be photo documented from where the sample was taken, after the paint sample was taken. The photos will be digital and recorded with the same labeled representative compartment number of the location where the sample was collected.

6.7 All samples will be logged on a Chain-of-Custody form and will be identified by the following

- Sample Name
- Vessel Name
- Qualified Person collecting the sample
- Date of Sample Collection
- Space / Level / Frame location of each sample, each one numbered uniquely

6.8 Paint samples will be acquired according to the requirements detailed below, and are more stringent than EPA Protocol Requirements in order to provide a more representative sampling of the entire ship.

6.9 Due to the requirement that the ship contain no PCB's > 50 PPM, composite sampling has been eliminated from the Kittiwake paint sampling plan, and a more comprehensive sampling plan is proposed.

6.10 Samples will be taken at various utility spaces such as storerooms and lockers which may not have been repainted during later years when paints containing pcb's were banned.

6.11 Special attention will be given to locations within the vessel which were subject to elevated temperatures such as engine compartments, compressor and generator rooms and other machinery spaces.

6.12 Paint of different colors within a given room/quarter/area will each be sampled individually.

7. Samples to be taken include the following:

7.1 Collect individual samples from multiple exterior hull locations (forward, midships and aft) from each side of the ship hull above the waterline.

7.2 Collect individual samples from multiple underwater locations (forward and aft) from each side of the ship below the waterline. The ex- USS Kittiwake is nested at James River Reserve Fleet, making it difficult to perform midships sampling below the waterline.

7.3 Collect individual samples from multiple areas on each level of the outside of all decks (superstructure) above the main deck. These are to be labeled by level and frame.

7.4 Collect a single sample from the top of the main deck.

7.5 On every deck above and below the main deck, collect an individual sample from each of the following: the overhead, the deck, and the bulkhead of the hallway/corridor, excepting different color paints as noted above.

7.6 On every deck above and below the main deck, collect an individual sample from each of the following: the deck, the overhead, and the bulkhead of one room which is in living quarters, office space, or other "white collar" area.

7.7 On every deck above and below the main deck, collect individual sample(s) from each room that was used to store ammunition, fuel, or other explosive or flammable material. This is to include any high temperature areas such as engine rooms, compressor rooms, machinery areas.

7.8 Collect individual samples from any areas of bulkheads, overheads, or decks that are painted with paint of a different color or texture than samples already covered under this plan (aluminized paints and any colored paints other than the standard on this type ship).

7.9 Collect individual samples from any areas that would be considered of 'less use' in regards to any past retrofitting or re-painting, such as storage lockers, utility areas, closets, storerooms and the like.

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7.10 As discussed in the joint MARAD/EPA/DMG/Cayman meeting in June, 2005 individual samples will be collected of the paint areas immediately adjacent to the Anchor Windlass, Towing Winch, Steering Gear, and any Capstan or other type rotating machinery that may have leaked residual lubricating or hydraulic fluid, and leached into the surrounding painted surfaces.

8. General ship-wide reefing plan:

The following identifies general ship-wide removal that is a part of the ex-USS Kittiwake Reefing Plan. This list has been included following for the purposes of reference. Paint samples (if the materials are painted) will not be taken from any of the materials noted following as they will be removed from the vessel during the remediation phase of the project.

- All lagging to be removed
- All overheads and walls are to have obtrusive obstacles, hooks, brackets and the like above 3 feet from the deck/floor cut flush to prevent diver entanglements
- All wood that is not solid and solidly in place is to be removed
- All portals, windows and hatches are to be removed
- All weather doors (external) are to be removed
- All interior hatches and doors are to be removed
- All foam and Styrofoam to be removed
- All thin metal and wood paneling to be removed
- All carpeting to be removed
- All light bulbs to be removed
- All florescent lights and fixtures to be removed
- All sheet metal to be removed
- All hinges for doors must be cut flush to avoid possible diver entanglement
- All filing cabinets to be removed
- All ductwork to be removed
- All steel locker boxes in poor condition and rusting badly to be removed
- All stairwells below deck to be removed; All stairwells above deck to remain as long as they are in good condition and intact
- All tank vents to be removed or cut off all caps
- All tank sounding plugs to be removed

9 . Ex-USS Kittiwake Room Inventory

The following list identifies the scope of all rooms that will be sampled. While this list is intended to be complete, any additional rooms found

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on board the Kittiwake will be sampled per this specification, whether they are included on this list or not. This list is included for reference purposes only.

- Bridge & Secondary Bridge
- Bridge/Binocular Locker
- Navigation Room behind Bridge
- Outside Fore top deck
- Outside top decks
- Outside Stern Decks
- Exhaust Stack
- Main Deck (second)
- Radio Transmitter Room
- Officer Quarters
- Captains Quarter
- Recompression Chamber Room
- Tool Room (forward of Recompression Chamber)
- Laundry Room
- Officers Mess
- Officers Lounge
- Officers Quarters
- Sonar Room
- Bow – Cargo & Windlass access
- Below Main Deck – General Offices
- Sick Bay
- Cold/Dry storage room
- Lounge/Gallery & Hospital Chief rooms
- Safety Office Room: 'B McKollar'
- Gyro Room
- Electronic Workshop room
- Ordinance Storage Room
- Ammunitions Magazine Room
- Air Bank Storage Room: ER46
- 3 Sewer tanks: (empty)
- Compressor Room
- Engine Room
- Propulsion Room – level 1
- Machine Shop
- Crew Quarters
- Crew's Lounge
- Lower deck tank storage bank rack
- Diving Locker
- Hydraulic Steering room
- Scuba storage tank room

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- Bilges
- Bulkheads

10. Paint Sample Analysis:

All paint samples will be shipped to Universal Laboratories, 20 Research Drive, Hampton, VA for analysis.

It is anticipated, given the oversize size of the ex-USS Kittiwake, that approximately 120 paint samples will be collected for analysis.

11. Time Frames:

It is estimated that the paint sampling will take approximately 7 full days to complete on the ex-USS Kittiwake. MARAD will be requested to provide access to the Contractor to accomplish the paint sampling in a timely manner. Following the sampling, the lab analysis results of all samples is estimated to take approximately 3 weeks.

12. Paint Sample Analysis Results:

Once the results of the paint sampling are completed, the following will govern the next course of action:

12.1 Negative Results: No PCB's > 50ppm found onboard the ex-USS Kittiwake:

In this instance where the ship is determined to be clean of PCB's in the paint of the ex-USS Kittiwake, the CITA and Cayman Islands Government will move forward with MARAD for the transfer of the vessel to the Cayman Islands Government for complete remediation (as per the "Kittiwake Reef Preparation Plan" (May 19, 2005 including any revisions to it)). In this instance, the results of the paint sampling will be provided to MARAD and EPA for their review and approval.

12.2 Positive Results: Areas of the ship's paint contain > 50 PPM of PBC's:

In the event that paint areas of the ex-USS Kittiwake return positive results for PCB's > 50 PPM, the scope of work to remove the hazardous materials will then be determined through a methodology and cost proposal from DMG to the Cayman Islands Government and CITA.

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The CITA and the Cayman Islands Government will determine if funding is available for the additional work effort required and advise MARAD of our decision in a timely manner.

Should the decision be to continue to move forward (as would most likely be the case if small/select PCB contamination areas are found), then CITA will advise MARAD of our decision, and provide both MARAD and US EPA with an update to the "Kittiwake Reef Preparation Plan" including the areas of contamination and proposed methodology to remove them for review, comments and approval. The results of the paint sampling will be provided to MARAD and US EPA for their review and approval as well. MARAD and US EPA will advise the CITA of any re-sampling requirements that are determined to be required once the PCB paint or contaminated area is removed.

Should the decision be that the additional costs of remediation of the ex-USS Kittiwake are prohibitive, CITA will advise MARAD of our decision, and the project will then be evaluated by MARAD and CITA as to the continuation of it or cancellation of it in total.